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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,944	06/08/2001	Juan Pablo Bravo Vasquez	8317-120-999	9071

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EXAMINER	
PADGETT, MARIANNE L	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

1. Applicant's citation of additional support on page 19 of the specification, as well as original claim 38 (37) is sufficient to remove the 112, first paragraph rejections of claim 66.

2. Claims 2-6 and 66-67 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

On page 15 of applicant's July 7, 2003 response, they state "...driving unreacted metal complex in step (c) has no consequence for performing steps (d) and (e), and visa versa". The examiner disagrees, because there is only one application step, i.e. (a), and if one removes the unreacted metal complex as claimed for (c) or for (e), if steps (d) + (e) are after (a), but before (b) + (c), then there is NO metal-complex left to be exposed by any following step! Applicant's arguments imply that driving off unreacted complex is only in exposed areas, but that is not what is claimed, nor what the examiners found supported in the specification. Page 15-17 cited by the applicant had no such disclosure. Page 18 and the flow chart of Fig. 1, indicate that the driving off of unreacted precursors (No. 28) is AFTER ALL reactions due to exposure to radiation, while driving off by-products (No. 25) is after (or during) each individual exposure step. The problem would appear to be that in lumping together two different driving off steps, confusion in when each is occurring has resulted. For these reasons, the part of the 112, second rejection of paper No. 9 (April 7, 2003) that concerns whether the driving off of unreacted complex interferes with the ability to perform later claimed steps is maintained.

3. Other 112 problems appear to have been removed, although the examiner notes that page 18, lines 18-21 does not give an actual definition of what is meant by "annealing temperature", the guidance of being insufficient to allow diffusion provides some bounds. The examiner also notes that Webster's Ninth New Collegiate Dictionary, page 87 gives a relevant definition of anneal, as "to heat then cool (as steel or glass), usu. for softening and making less brittle," hence considering these inputs, in

claim 11 one may consider that the local temperature is being required to be below the softening temperature or the temperature at which diffusion occurs, as a reasonable metes and bounds to the claim.

The examiner notes that in claims 4, 5, 9, 11, etc., applicant has removed the articles showing antecedent basis for the "...source" limitation, the examiner does not understand why this has been done, however office policy (for 1700), is to no longer reject these kinds of antecedent basis discrepancies, and to merely consider them in their broadest possible meaning, i.e. each time a limitation is introduced with "a" it may or may not refer back to the previous like term.

4. Concerning the reference "by Ciferri," the examiner was actually looking at "Metallomesogens..." edited by Serrano, but at that time did not look at applicants' citation (BJ on the PTO-1449), and there is no actual title/cover page supplied with this reference, but the first page provided is a list of related reading, where the examiner mistook Ciferri as the editor of the supplied excerpt.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-4, 7, 11-12, 18-44, 49, 52 and 54-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al (5,534,312), in view of Yundt (4,199,649) as discussed in section 10 of paper No. 9 (mailed 4/7/2003).

Applicants' argue against the combination of Hill et al and Yundt on the grounds that Yundt uses photoresists and Hill does not, however this is NOT convincing, because Yundt is making a photo resist using a mask (analogous to Hill et al's use of a mask in Fig. 1), not necessarily using one, and nothing in applicants' claims exclude their products from being photoresists, nor is Yundt's patterning process limited to only producing photoresists, as is illustrated by column 13, lines 45-59, which discusses light patterning techniques that are not related to photoresist, and alternatively those are. In both Hill et al (312) and Yundt the deposited material is selectively reacted by photo exposure via patterned light, for analogous purposes as previously discussed, hence the examiner does not agree with applicant that one of ordinary skill would find the process non-analogous.

Note with Yundt's material, the laser causes neither diffusion nor softening of the material, just photoreacting, thus may be considered below annealing temperature as discussed by applicant on page 15 of their response and above. While laser derived local temperatures are not disclosed, the low temperature otherwise employed, and no disclosed melting, etc., suggests low values as claimed.

7. Claims 1-11, 13-16, 44 and 51-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hill et al (312), in view of Lin (5,348,775), as applied in section 10 of Paper No. 9.

Applicant appears to be arguing against the Hill et al combined with Lin rejection on the grounds that they assert that Lin is a curing reaction, not a photochemical reaction. This is not convincing as Lin teaches a laser patterning process as an alternative to thermal, and because whether one calls it curing or not, it is a photoreaction, involving chemicals (polynuclear complexes with metals) treated via laser light hence is photochemical, and causes organometallic compounds to form metal oxide deposits.

It is noted that by applicant's explanation of annealing temperature (i.e. causes diffusion), Lin's laser annealing would not be considered annealing, nor is the decomposition to form the (crystalline) perovskite, annealing as discussed by Webster's, since no softening occurs. If one assumes that the temperatures given by Lin for annealing in the thermal process option (column 3, lines 18-20; column 4, lines 60-64) are the localized temperatures produced by the laser in the laser direct writing (annealing), they are higher than those employed by applicant's claim 12, which has hence been removed from this rejection.

Lin shows the reactivity of compounds/complexes as employed by Lin when exposed to laser light, and that they are mesomorphous due to descriptions thereof which conforms to the definition of such phases. Hill et al is teaching the deposition of metal complexes of related chemical structures, but amorphous. Lin is NOT being applied as the primary reference. There is no reason to assume one of ordinary skill in the are incapable of applying Lin's teaching to Hill et al solely for the deposition of PZT and related ferroelectrics explicitly discussed, as clearly suggested by Lin's claim 5 which suggest Cr, Fe, Ne, etc, as cited by the examiner, but denied by applicant. As previously noted Fe and Ru are homologous, i.e. have the analogous chemistry due to being in the same column of the periodic table, hence expected to have similar chemistry.

The primary reference suggests that their process is applicable to complexes (inorganic, organo-metallic or organic) for any transition metal, any main group metal (such as Al...), etc., hence as applied in paper No. 9, the examiner continuous to maintain that in view of Lin or Yundt, as evidenced by their use of analogous complexes that are mesomorphous by definition, in photopatterning processes, that such compounds would have been expected by one of ordinary skill to be equally effective in the processes of Hill et al (312), because they're already been shown to be effectively patterned by masked or directed light.

8. Applicant's arguments filed July 7, 2003 and discussed above have been fully considered but they are not persuasive.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication from the examiner should be directed to M. L. Padgett whose telephone number is (703) 308-2336 or after mid December (9th or 10th) (571) 272-1425. The examiner can generally be reached on Monday-Friday from about 8:30 a.m. to 4:30 p.m.; and fax phone numbers are (703) 872-9306 (all Official).

M.L. Padgett/dh
November 12, 2003

November 21, 2003

MARIANNE PADGETT
PRIMARY EXAMINER